

KEY FINDINGS OF THE REPORT

Siddharth Ghanshyam Singh



Petrochemical Industry

Biodegradable
Compostable
Plastic Industry

Producers,
Importers,
Brand Owners

Retailers and
Street vendors

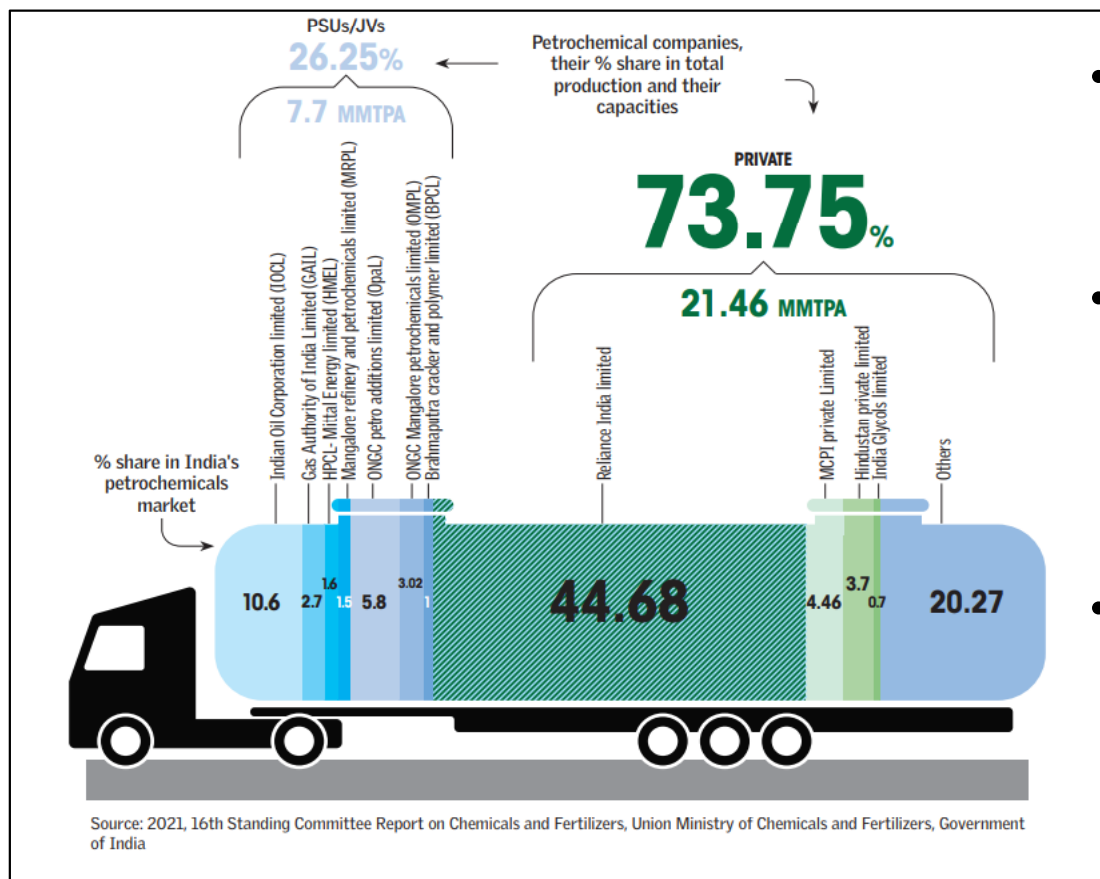
Consumers

Informal Sector

Formal Recycling

The way
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The invisible link- Petrochemicals and Plastics



- **99 per cent** of the plastic derived from chemicals that come from fossil fuels
- **67 per cent** of the petrochemical manufacturing capacity is utilized to manufacture polymers (plastics)
- India plans to position itself as a major exporter of basic petrochemicals, especially polymers, by increasing export by over **100 per cent**



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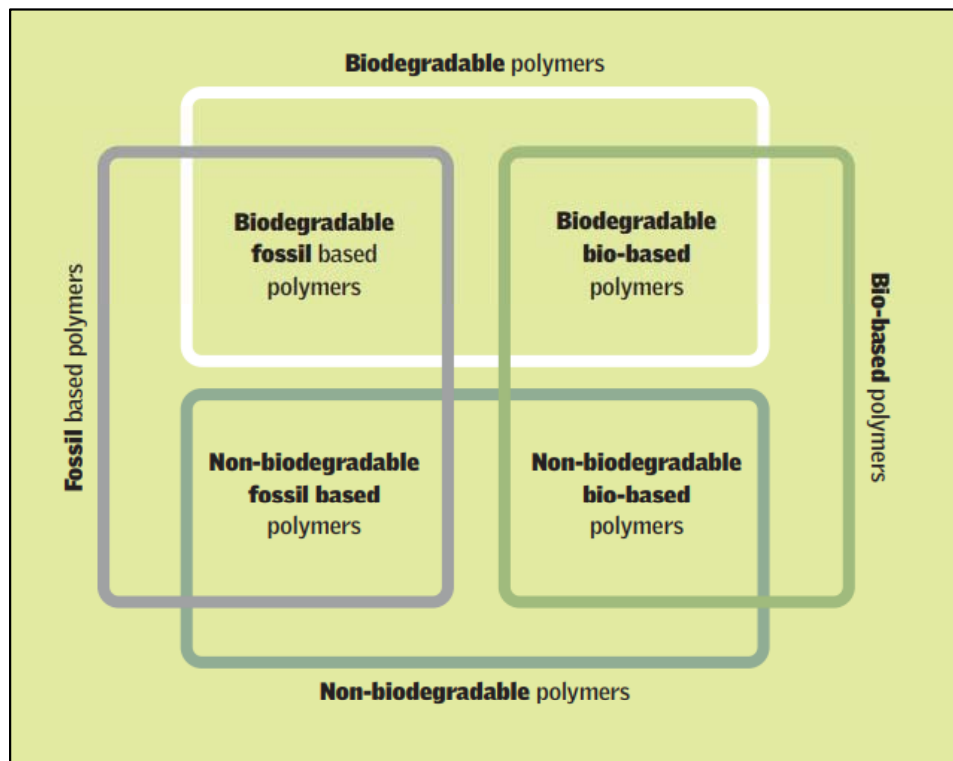
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Compostable and Biodegradable Plastics - offering solutions or problems?



Source: Biodegradability of plastics in open environment, 2020, European commission

- We are looking at compostable and bio-degradable plastic as an alternative to SUP.
- The cumulative production capacity of compostable plastics in India is not clear.
- We are yet to create a collection mechanism for collection of compostable plastic waste, and channelize for industrial composting.



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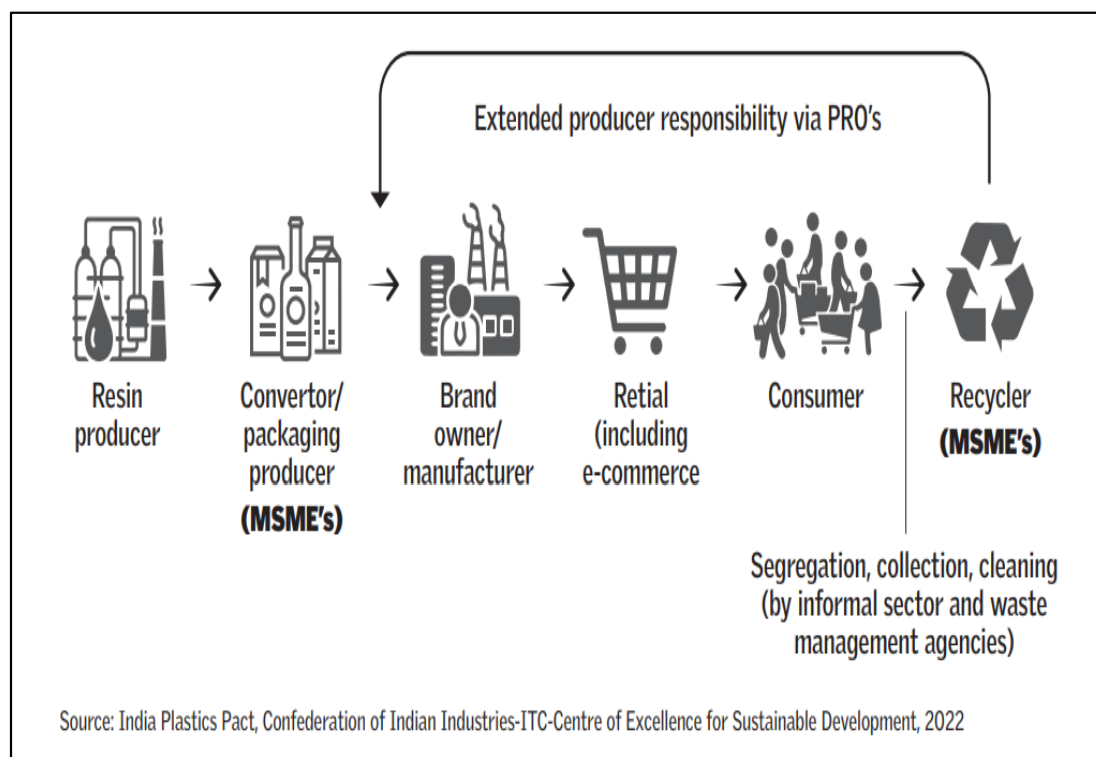
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The Landscape of Plastic Industry and the Producer, Importer, Brand Owner's (PIBO's)



- More than 37 per cent of the petrochemicals produced were used for packaging applications.
- 3 PIBO's have disclosed their plastic footprint in public domain.
- At least 3 PIBO's have declared themselves as plastic neutral.



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Retailers and Street Vendors – The missing link

- In absence of incentive, the plastic waste handling by the retailers and street vendors is not a lucrative proposition to bear the cost of the reverse logistic value chain
- The role of these two important stakeholders are minimal in collection and channelization of plastic waste to its destination
- Retailers and street vendors continues to be the missing link between waste handlers and waste generators (consumers)
- The system of deposit refund system (DRS) is currently in implementation in as many as 40 countries but yet to be considered in India



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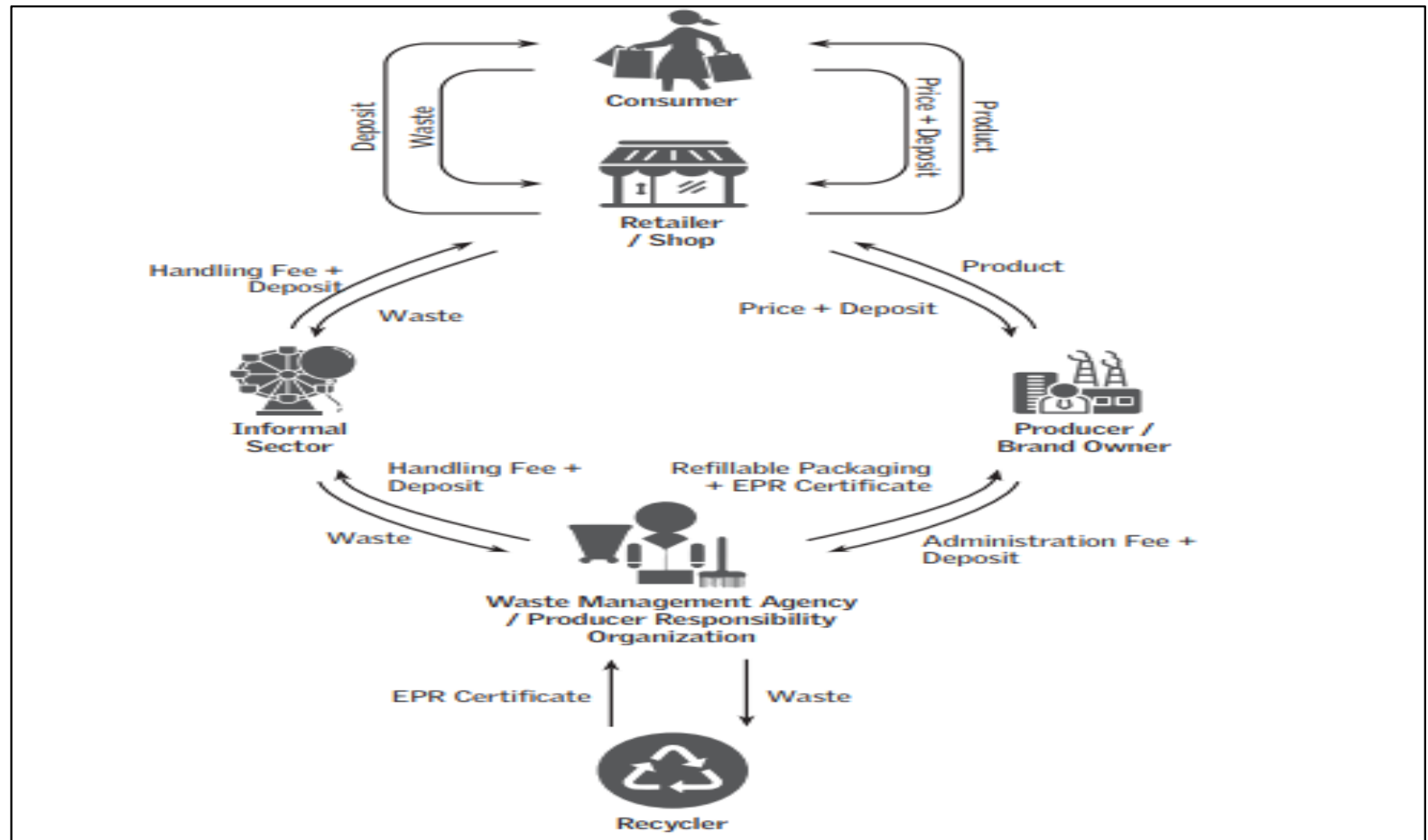
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How DRS works for Retailer and Street Vendors?



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How Consumers React to Plastics?

Findings from CSE's survey

- 76 per cent are willing to pay for plastic alternatives
- 50 per cent felt that plastics have been imposed upon them
- 67 per cent felt that many quality of plastic packaging is difficult to recycle
- 73 per cent were not happy with the product packaging
- 47 per cent did not segregate plastic at source
- 19 per cent threw plastic in mixed waste bin

Packaging options therefore do not depend on consumer perception, rather driven by economic interest of the PIBOs



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Dry waste type	Dry waste name	Local name	Daily minimum quantity (kg)	Percentage (based on minimum collection)	Daily maximum quantity (kg)	Percentage (based on maximum collection)
Plastic	PET	Kadak	2	12.5	2.5	10.87
	Rigid	Phugga	3	18.75	4	17.4
	Rigid	Kala phugga	0.5	3.125	1	4.35
	Flexible (transparent)	Main	0.5	3.125	1	4.35
	Flexible (coloured)	Mix main	3	18.75	4	17.4
Paper	Cardboard	RS	3	18.75	5	21.73
	Cardboard	Puttha	3	18.75	4	17.4
	Paper	Kagad	1	6.25	1.5	6.5

Source: CSE research, 2022

More than **50 per cent** of the waste collected by the informal sector is plastic

Roughly **40 per cent** of all the waste collected does not have a forward linkages.



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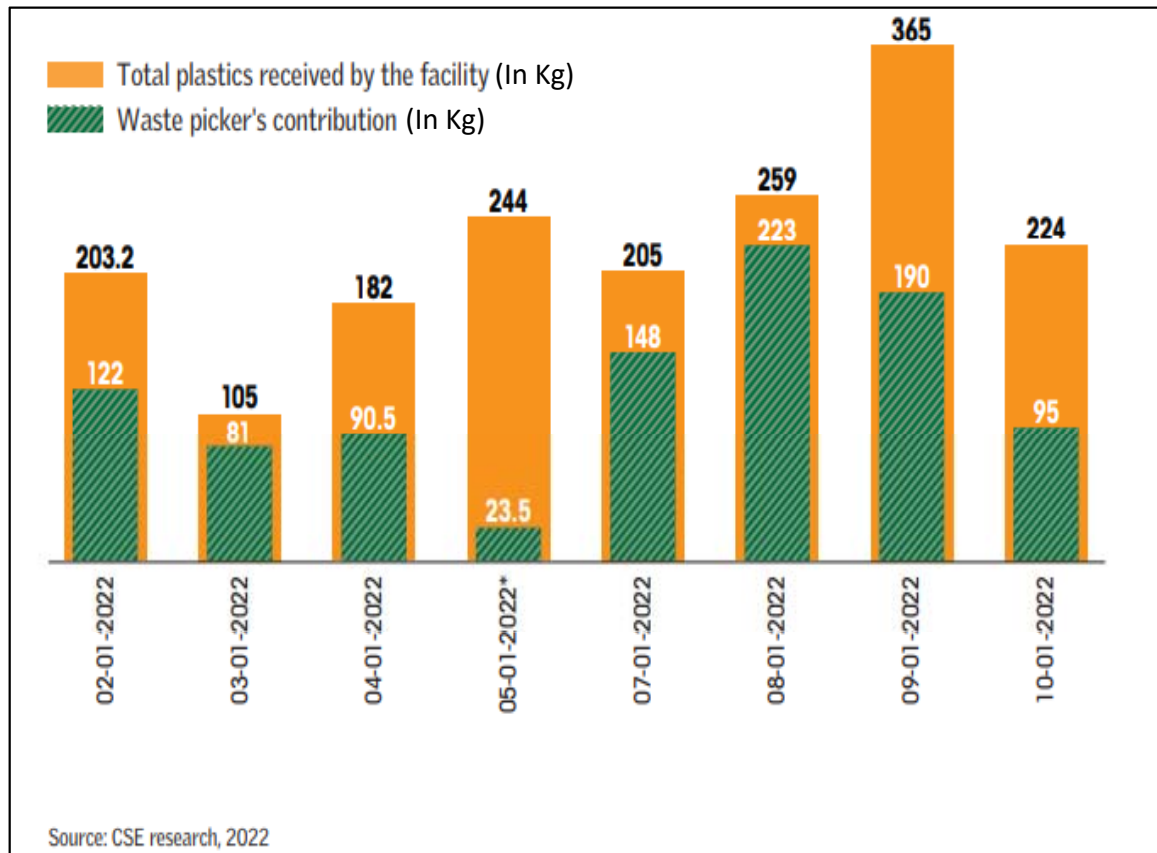
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The informal sector



The informal sector workers diverts a minimum of 42 per cent and a maximum of 86 per cent of the plastic waste to MRF's

33 per cent waste was classified as system rejects.



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Understand **politics** of recycling

- Industry argues that plastic is not a problem because what we generate is recycled
- But data from India shows that large amounts of plastic still ends up in our landfills (not collected and not recycled)
- So we need to understand what 'recycling means'
- **A. what has value** and so it will be collected and processed
- **B. what is the cost of this recycling** and if it will be done by the rich or only the poor and in what conditions and where?



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Recycling **de-constructed**

Types: As per CPCB

- Primary recycling (products as good as original or upcycled)– difficult and costly
- **Secondary recycling (products less demanding performance) – bulk of the recycling is done in this way; sorted; melted; pellets made)**
- Tertiary recycling – producing fuel/chemicals from waste
- Quaternary recycling – incineration for energy – sending to cement plants for fuel



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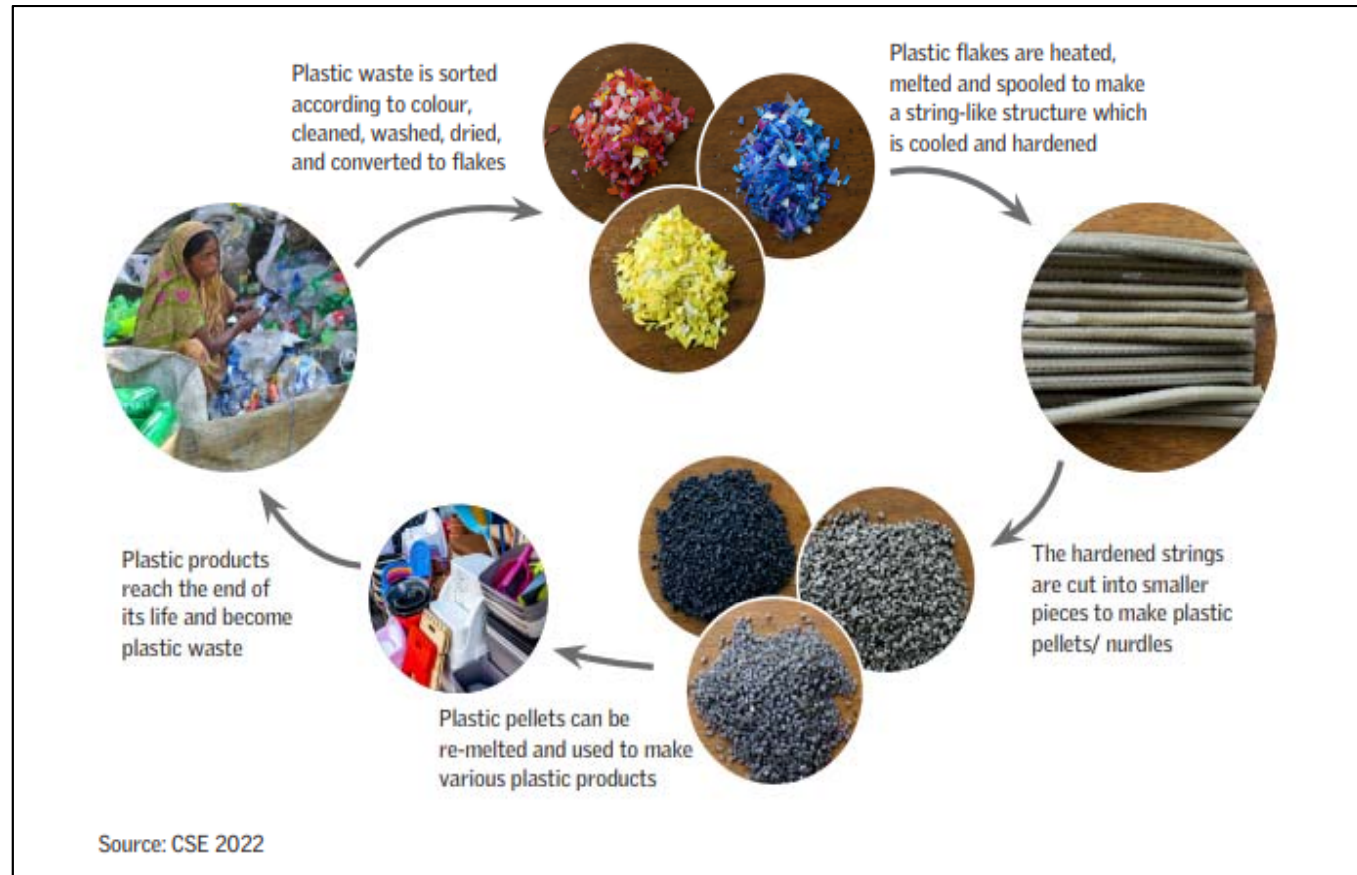
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Plastic recycling (secondary)



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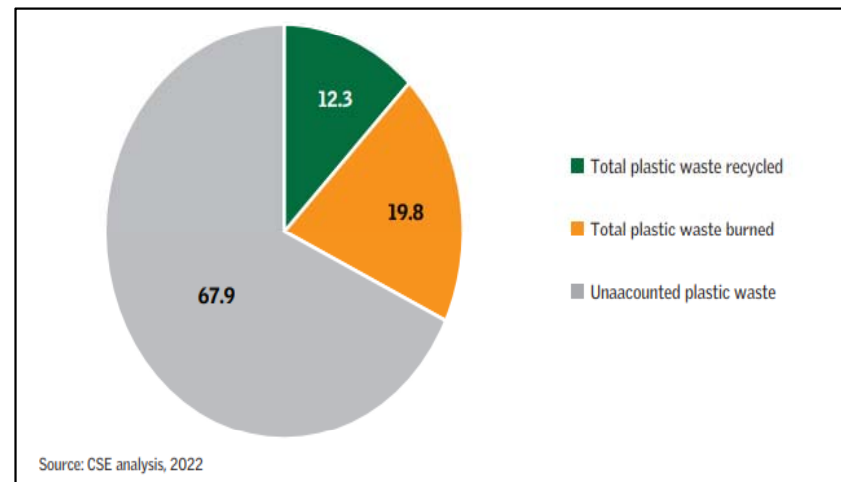
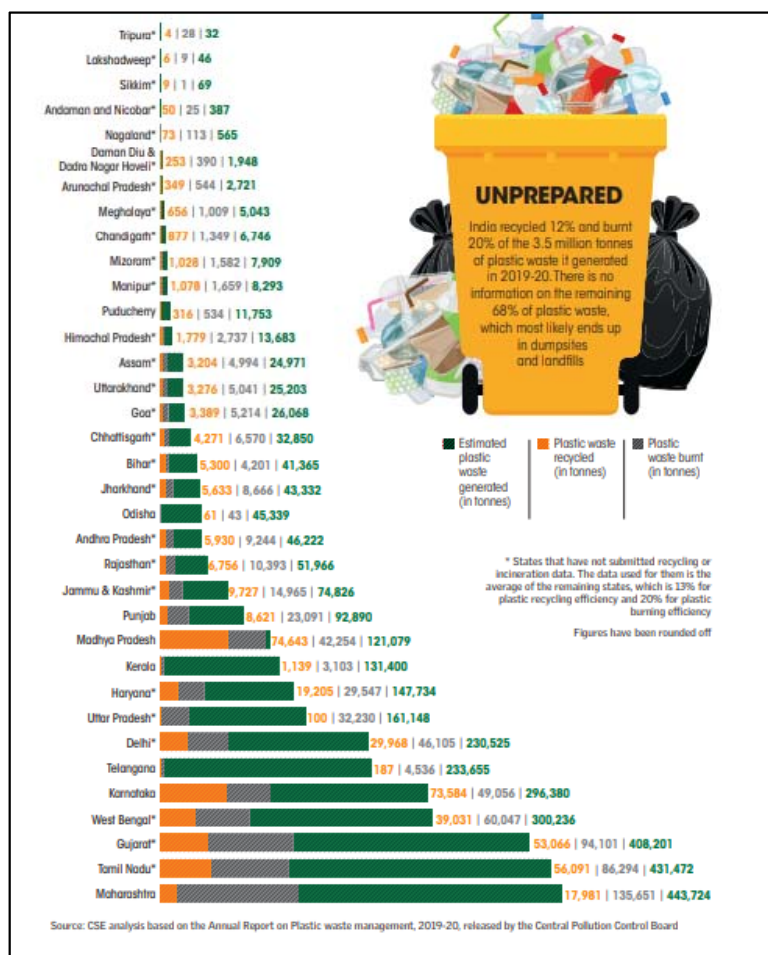
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Plastic recycling – Current Status



Almost **70 per cent** of the plastic waste collected by one of the major recycler in India was sent for tertiary or quaternary recycling.

Almost **60 per cent** of the waste collected by another major recycler in India was processed by chemical recycling.



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The way forward.

- Short term actions:
 - Strengthen the inventories, collect credible data
 - Monitor biodegradable and compostable plastics
 - Proactive disclosure policy for PIBOs
 - Ensure credible labelling
 - Involve the informal sector
 - Rationalise the EPR system
 - Promote refillable/reusable models of packaging
 - **Ban Multi-layered plastic (MLP)**



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They way forward.

- Medium term actions:
 - Institute design changes in product packaging
 - Encourage R&D on plastic packaging
- Long term actions:
 - Match environmental choices with economic choices
 - Introduce DRS



Thank you!

